Poster presentations

Canine infectious respiratory disease: Evidences for multiple paramyxovirus detection associated with the disease and first identification of canine pneumovirus in Thailand

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OBJECTIVES

To investigate the incidence of paramyxoviruses and pneumovirus associated with the outbreak of canine infectious respiratory disease (CIRD) in Thailand and to analyse the genetic relationship of the detecting canine pneumovirus (CnPnV) with other pneumoviruses reporting in various species.

METHODS

Both nasal and oropharyngeal swab samples were collected from 209 dogs with respiratory symptoms. Respiratory signs were graded by veterinarian on the date of sampling. A pan-PCR for Paramyxoviruses (PMX) was used to screen the viruses. The positive samples were subjected to further PCR detecting pneumoviruses (PNE). Nearly complete CnPnV genomes were obtained by PCR amplification. All positive samples were then subjected to whole genome sequencing and phylogenetic analysis.

RESULTS

A Total 62 dogs showed PMX-PCR positive, presenting the canine distemper (CDV) ($n = 35$), canine parainfluenza (CPIV) ($n = 28$), and the CnPnV ($n = 6$). Among them, multiple virus detection was accounted for 58.1% ($n = 36$) with a high frequency of CPIV co-detection. The clinical severity was high in multiple virus detection ($p < 0.001$). For genetic and phylogenetic analysis, the CnPnV Thai strains revealed 2 distinct clades which closed to Italian prototype and a novel orthopneumovirus, derived from feral swine in USA.

STATEMENT (CONCLUSIONS)

This study highlights the complex of the CIRD that caused by the paramyxoviruses that revealing more clinical severity level in dogs with multiple viral detections. This research also suggests the evidence of CnPnV in Thailand as a first report in Asia and emphasized the possibility of interspecies transmission of CnPnV between dogs and pigs.

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